

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

To:

see form PCT/ISA/220

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**  
(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/BR2004/000068

International filing date (day/month/year)  
18.05.2004

Priority date (day/month/year)  
22.05.2003

International Patent Classification (IPC) or both national classification and IPC  
F04B49/10, F04B49/06

Applicant  
EMPRESA BRASILEIRA DE COMPRESSORES S.A. EMBRACO

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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10/557538

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/BR2004/000068

**IP20 Rec'd PCT/PTO 21 NOV 2005**

**Box No. I Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. II Priority**

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1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-19
	No: Claims	
Inventive step (IS)	Yes: Claims	1-8,10-19
	No: Claims	9
Industrial applicability (IA)	Yes: Claims	1-19
	No: Claims	

2. Citations and explanations

**see separate sheet**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

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**Re Item V.**

1. The following documents are referred to in this communication:  
D1 : EP 1 143 146 A (BOC GROUP PLC)  
D2 : US 3 766 747 A (LENNOX INDUSTRIES INC.)
2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 9 is not inventive in the sense of Article 33(3) PCT.
  - 2.1 Document D2 discloses a hermetic fluid pump (compressor) having a cylinder, a piston and an electric motor enclosed in a hermetic housing, wherein said housing includes hermetic electrical terminal means, as defined in the preamble of claim 9. Furthermore, the pump of D2 comprises a sensor assembly (sensor 60) associated to the valve mechanism of the cylinder block, wherein said sensor includes a feed terminal (70) being connectable electrically to the terminal means feeding the electric motor ("motor 42 is connected ... through contacts 70a and 70b of relay coil 70").

The subject-matter of claim 9 differs from the pump of D2 merely in that it specifies the presence of a signal terminal being connectable to an external measuring circuit. This distinguishing feature is, however, considered to come within the normal scope of practice followed by a skilled person attempting to enhance the circuit known from document D2. In particular, the skilled person would know to combine the sensor circuit of D2, e.g. with the help of line/contact 74, to an external measuring device or circuit.
  - 2.2 The combination of technical features defined by the respective subject-matter of dependent claims 2 or 15 is not known from, nor rendered obvious by, document D2 and/or any of the documents cited in the search report.
3. Document D1, which is considered to represent the most relevant state of the art, discloses a sensor assembly suitable for measuring accelerations and vibrations of a fluid pump having the technical features as defined in the preamble of independent claim 1. From this, the subject-matter of independent claim 1 differs essentially in that the accelerometer is associated to a bias circuit, the accelerometer configuring first and second acceleration transducers.

The subject-matter of claim 1 is therefore novel (Article 33(2) PCT). The subject-

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matter defined by claim 1 is considered as involving an inventive step (Article 33(3) PCT), since none of the documents cited in the search report leads in an obvious manner to a bias circuit in combination with first and second acceleration transducers.

Claims 2-8, as well as independent claim 19, are referring back to claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.